REMARKS

Reconsideration and allowance of this application are respectfully requested in light of the above amendments and the following remarks.

Applicants wish to thank the examiner and her supervisor for the courtesy extended to Applicants' representative during the personal interview conducted on January 9, 2007. The substance of the points and issues discussed during the interview is included in the following remarks. No agreement was reached regarding patentability; the examiners indicated that further consideration would be needed before issuance of a notice of allowance.

Fig. 1 has been amended to overcome the objection thereto. More specifically, Fig. 1 has been amended to include a legend identifying the drawing as related art. Fig. 2 has been amended to remove an arrow that was unintentionally included in the drawing.

Claims 14-22 and 25-29 have been cancelled in favor of new claims 30-42. Support for the subject matter of the new claims is provided in the cancelled claims. These amendments were not presented earlier due to the unforeseeability of the remarks presented in the Final Rejection.

Claims 25 and 29 were rejected, under 35 USC §103(a), as being unpatentable over Applicants' Description of the Related Art in view of Yoshida (EP 0 944 200). Claims 21, 22, and 28 were rejected, under 35 USC §103(a), as be unpatentable over the the Applicants' Description of the Related Art . Claims 14 and 15 were rejected, under 35 USC §103(a), as being unpatentable over the ADRA in view of Yoshida and Sugiyama et al. (US 5,862,175). Claims 16-20 were rejected, under 35 USC §103(a), as being unpatentable over the Applicants' Description of the Related Art in view of Yoshida and Lee et al. (US 6,259,744). To the extent the rejections may be deemed applicable to new claims 30-42, the Applicants respectfully traverse based on the points set forth below.

Claim 30 recites features of canceled claim 25 and defines a receiving apparatus having a plurality of demodulators that each demodulates a received symbol based on a different demodulation pattern, which pattern corresponds to a bit of an idealized modulation constellation, such that each demodulator applies a demodulation pattern corresponding to a different bit of the idealized constellation. A detector corresponding to each demodulator determines whether the demodulated information represents a correctly received bit or a bit perceived to be errantly received. And regenerated information represented by

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the received symbol comprises the demodulation information produced by all of the demodulators.

Thus, each of the set of bits represented by the received symbol is demodulated and detected by a separate demodulator/detector pair. Together, the plurality of demodulator/detector pairs determine which of the set of bits represented by the received symbol are received correctly so that the information represented by the communicated symbol may be regenerated. It is submitted that the teachings of the references applied to claim 25 fail to teach or suggest these features.

The Final Rejection proposes that Yoshida discloses, in paragraph 96, a plurality of demodulators 206-209 that demodulate a signal based on regions of demodulation patterns to which signal points belong (see Final Rejection page 5, lines 11-13).

Although Yoshida may disclose demodulating a received symbol using a plurality of different demodulating schemes, Yoshida does not disclose the claimed feature of applying different demodulation patterns, each corresponding to a different bit of an idealized modulation constellation, to a received symbol. Yoshida also does not disclose the claimed demodulator/detector pair that cooperates to detect whether a bit, represented by the received symbol and corresponding to the applied bit pattern of

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the idealized modulation constellation, was received correctly.
Thus, it necessarily follows that Yoshida cannot disclose the
claimed plurality of demodulator/detector pairs that cooperate to
determine which of the set of bits represented by the received
symbol are received correctly.

By contrast to the above-noted claimed features, Yoshida
discloses, in Fig. 3, applying QPSK, 16 QAM, 64 QAM, and 256 QAM
demodulation to a received symbol and storing the respective
demodulation results (see Yoshida ¶ [0096]). Yoshida further
discloses applying QPSK, 16 QAM, 64 QAM, and 256 QAM likelihood
functions, defined by mean/variance-difference equations 2-4, to
the received symbol to determine which applied likelihood
function produces the minimum value (see ¶ [0097]). If the
applied QPSK likelihood function produces the minimum
mean/variance difference, then only the stored QPSK demodulation
result is used to regenerate the information represented by the
communicated symbol (see ¶ [0097]). Similarly, a minimum
mean/variance difference detected by one of the other likelihood
functions causes its corresponding demodulation result to be used
for regenerating the information represented by the communicated
symbol (see ¶ [0097]).

In summary, Yoshida discloses applying a plurality of
mean/variance likelihood functions to a received symbol to

determine which produces the minimum mean/variance difference. The function producing the minimum difference determines which corresponding one of a plurality of demodulators is used to regenerate the information represented by the communicated symbol. Thus, only one of Yoshida's demodulators is used to regenerate the information represented by the communicated symbol, whereas claim 30 recites that the regenerated information represented by the received symbol comprises the demodulation information produced by all of the demodulators.
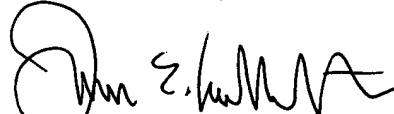
The Final Rejection does not propose that the Applicants' Description of the Related Art, Sugiyama, and Lee supplement the teachings of Yoshida with respect to the above-described features.

Accordingly, the Applicants submit that the applied prior art items, considered alone or in combination, do not anticipate or render obvious the subject matter defined by claim 30. Independent claim 33 similarly recites the above-mentioned features distinguishing claim 30 from the applied references. Therefore, allowance of claims 30 and 33 and all claims dependent therefrom is warranted.

In view of the above, it is submitted that this application is in condition for allowance and a notice to that effect is respectfully solicited.

If any issues remain which may best be resolved through a telephone communication, the Examiner is requested to telephone the undersigned at the local Washington, D.C. telephone number listed below.

Respectfully submitted,

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IN THE DRAWINGS

Proposed changes to Figs. 1 and 2 are submitted herewith, with a Submission of Proposed Drawing Amendments.
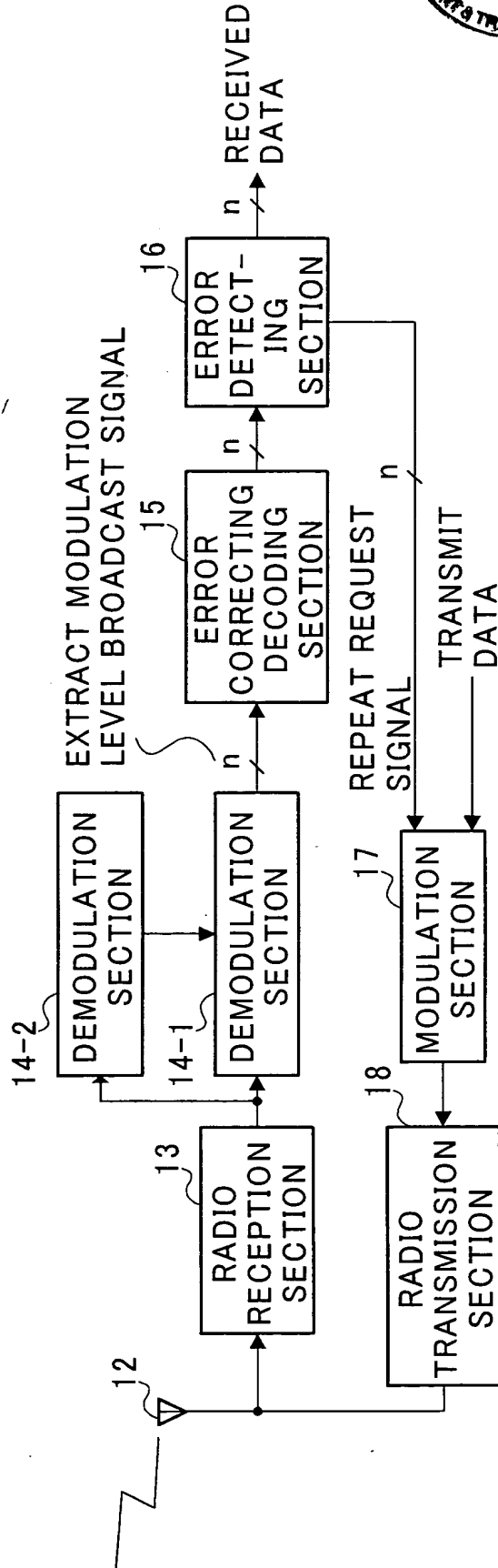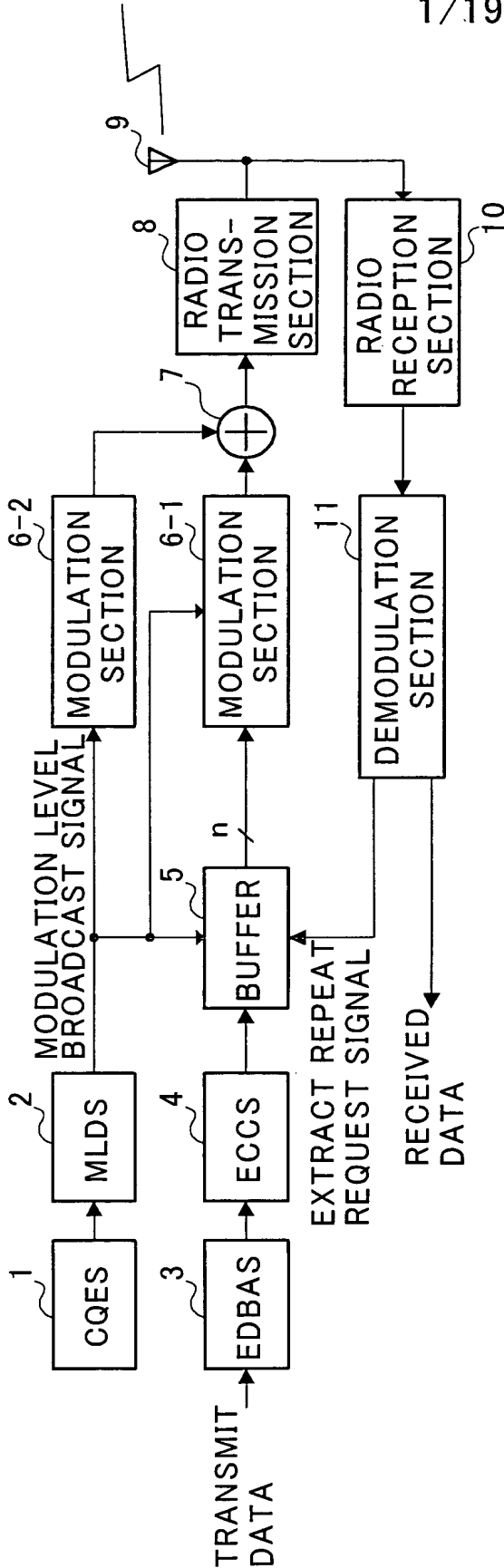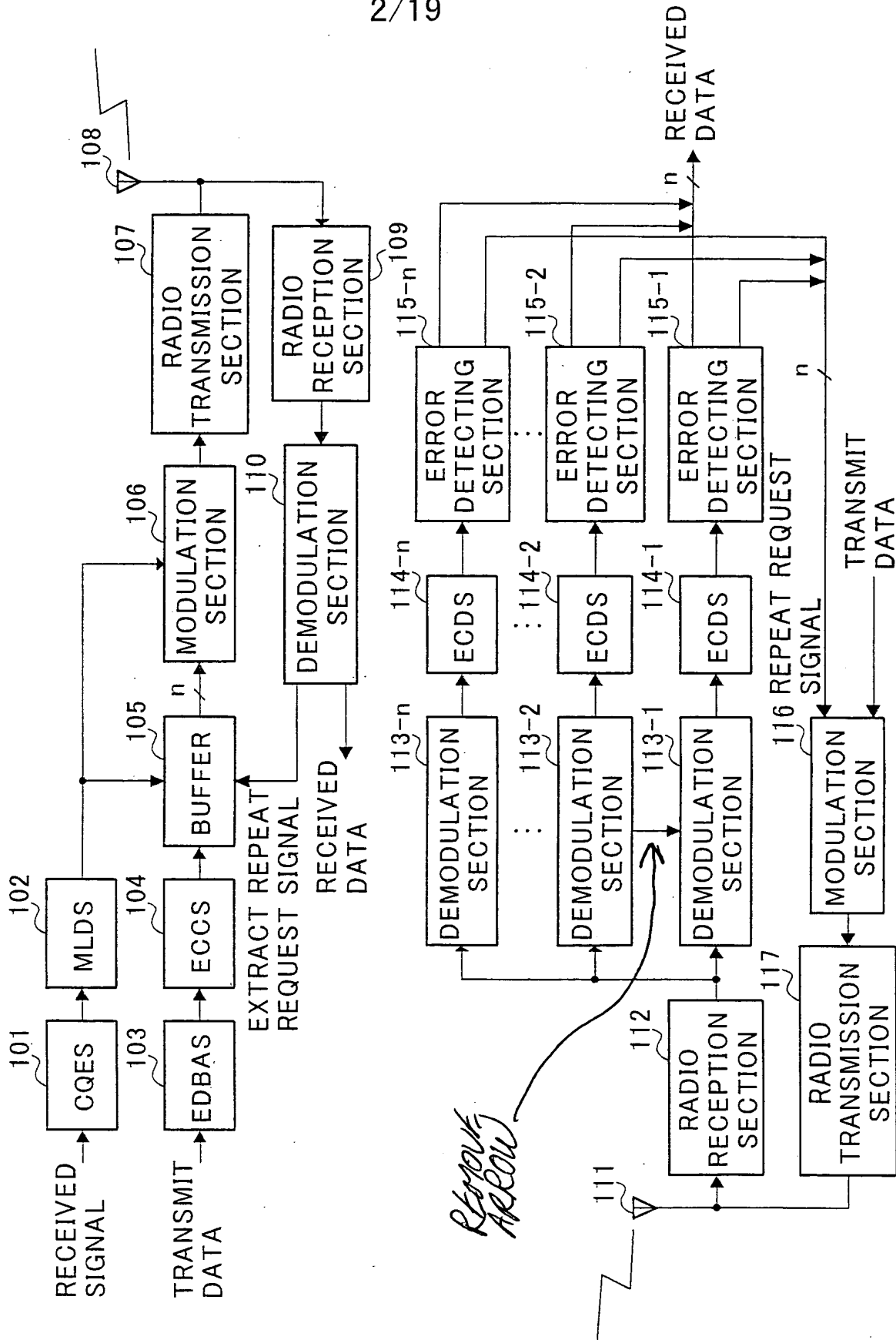
RELATED ART

FIG.1

FIG.2